



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
P.O. Box 1450
Alexandria, Virginia 22311-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,225	11/02/2001	Steve Lasecki	09712-162001/ Z-248	3551

26161 7590 06/09/2003

FISH & RICHARDSON PC
225 FRANKLIN ST
BOSTON, MA 02110

EXAMINER

SONG, SARAH U

ART UNIT	PAPER NUMBER
----------	--------------

2874

DATE MAILED: 06/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/053,225

Applicant(s)

LASECKI ET AL.

Examiner

Sarah Song

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-9, 11-14 and 16-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 12-14, 16 and 17 is/are allowed.
- 6) ☒ Claim(s) 1-9, 11 and 18-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 May 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 2874

DETAILED ACTION

1. Applicant's communication filed on April 8, 2003 has been carefully studied by the Examiner. The arguments advanced therein, considered together with the amendments made to the claims, are persuasive and the rejections based upon prior art made of record in the previous Office Action are withdrawn. Claims 1, 11, 12, 16, 17, 18 and 20 have been amended. Claims 10, 15 and 22 have been canceled. Claims 1-9, 11-14 and 16-21 are pending.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "1230" has been used to designate both the center of lens 106 and elongated groove (see Figures 11 and 12A, respectively). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

4. **Claims 1-3, 6, 11 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Blonder et al. (previously relied upon).** Blonder et al. discloses an apparatus which holds an optical fiber in alignment to an optical device, said apparatus comprising: a fiber holder 60 having a first plurality of indentations 66, 68 formed therein; at least one optical fiber 32 within a corresponding one of said first plurality of indentations; a base substrate 30 having a second

Art Unit: 2874

plurality of indentations 40, 42, 62, 64 formed into said base; a plurality of spacers 70, 72, each of said plurality of spacers within a corresponding one of the second plurality of indentations, wherein said fiber holder 60 is mounted on said base 30 with said plurality of spacers within said first plurality of indentations; an optical device (lens) 50 mounted to said base; and an additional spacer 46, 48 mounted within one of said second plurality of indentations wherein said optical fiber extends between opposite ends of said fiber holder, and wherein said fiber holder is mounted to said base in contact with said additional spacer at one of said ends of said fiber holder and established a horizontal position of said fiber holder. The first plurality of indentations includes an elongated groove (e.g. groove 34), and wherein said optical fiber is held within the elongated groove. Regarding claim 6, the spacers 46, 48, 70 and 72 are spherically shaped. Regarding claim 11, it is noted that one of the second plurality of indentations is formed to a different depth than a second of the second plurality of indentations (see fiber groove sections 36 and 38). Regarding claim 18, the second plurality of indentations formed in said base 30 includes at least one indentation 40, 42 located adjacent to an edge of said base, and wherein one of said plurality of spacers held within the one indentation adjacent to the edge of said base protrudes beyond the edge of said base and inherently establishes a known distance from a contact point on said spacer to a point on said base. See Figures 6 and 8.

Claim Rejections - 35 USC § 103

5. **Claims 4, 5, 7-9 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blonder et al.** Regarding claim 4, 8, 9 and 19, Blonder, discussed above, suggests that other types of fiducial features could be implemented, but does not specifically disclose a trapezoidal-shaped pocket/indentation. Trapezoidal-shaped pockets and pyramidal-shaped

Art Unit: 2874

pockets are well known in the art of self-aligned optical devices and are considered equivalents in the art. Therefore, trapezoidal-shaped pockets would have been obvious to one having ordinary skill in the art in place of any of the pyramidal-shaped pockets of Blonder et al. for retaining the spherical spacers of Blonder et al. Furthermore regarding claim 19, it is noted that the spherical spacers would contact an interior wall of the trapezoidal-shaped pocket in the same manner as it contacts an interior wall of the pyramidal-shaped pocket. Regarding claim 5, Blonder et al. discloses the lens 50 in groove 52, but does not specifically disclose the lens to be mounted in an elongated groove. It is noted that groove 52 is elongate in the directional perpendicular to the optical axis. Furthermore, Blonder et al. suggests that a lensed fiber could also be utilized (column 3, lines 67 and 68), thus, suggesting a lens mounted to said base within the elongated groove 38. Regarding claim 7, Blonder et al. does not disclose the spacers and the lens 50 to be made of the same material. However, they appear to be identical, and furthermore, one of ordinary skill in the art would have found it obvious to provide the lens and spacers of the same material to minimize the number of the materials required for the package assembly.

6. **Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steinberg et al. (U.S. Patent Application Publication 2002/196998) in view of Shahid (U.S. Patent 5,613,024).** Steinberg et al. discloses an apparatus which holds a plurality of optical fibers 28 in alignment to a plurality of optical devices 56, said apparatus comprising: a fiber holder 22 having a first plurality of indentations 24 formed therein; a plurality of optical fibers 28, each of said plurality of optical fibers within a corresponding one of the first plurality of indentations; a base substrate 30 having a second plurality of indentations 32 formed into said base; a plurality of optical device 56 mounted to an end of said fiber holder (via adhesive 60)

Art Unit: 2874

wherein each of said plurality of optical devices are aligned with a corresponding one of said plurality of optical fibers, wherein said base substrate further includes an elongate recess 34 and wherein said plurality of optical devices fits into said recess. Steinberg et al. does not disclose a plurality of spacers.

7. Shahid discloses a apparatus which holds a plurality of optical fibers 35 in alignment to a plurality of optical waveguides 12, said apparatus comprising: a fiber holder 31 having a first plurality of indentations 34, 37, 38 formed therein; a plurality of optical fibers 35, each of said plurality of optical fibers within a corresponding one of the first plurality of indentations; a base substrate 32 having a second plurality of indentations 34, 37, 38 formed into said base; a plurality of spacers 15, 16, each of said plurality of spacers within a corresponding one of the second plurality of indentations 37, 38, wherein said fiber holder 31 is mounted on said base 32 with said plurality of spacers within said first plurality of indentations; and a plurality of optical waveguide 12 mounted to an end of said fiber holder wherein each of said plurality of optical waveguides are aligned with a corresponding one of said plurality of optical fibers.

8. The devices of Shahid and Steinberg et al. are both directed to fiber arrays that are aligned with integrated optical device arrays. One of ordinary skill in the art would have found it obvious to provide the plurality of spacers and indentations of Shahid in the device of Steinberg et al. to provide passive alignment of the optical fiber array with both the lens array and the waveguide array of Steinberg et al. One of ordinary skill in the art would have been motivated to make such a modification to eliminate the active alignment step of Steinberg et al. and thus providing a simplified and reduced-cost alignment process.

Art Unit: 2874

Allowable Subject Matter

9. Claims 12-14, 16 and 17 are allowed.

10. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not disclose all of the limitations of claim 12, which recites in addition to other features, "said optical device is mounted to said base with an edge of said optical device in contact with at least two of said second plurality of spacers", as noted by the applicants on page 9 of the response. The prior art of record also does not disclose all of the limitations of claim 16, which recites in addition to other features, "said optical device is mounted to said base with said flat face [of said optical device] in contact with at least three of said second plurality of spacers", as noted by the applicants on page 10 of the response.

Response to Arguments

11. Applicant's arguments with respect to claims 1-9, 11 and 18-21 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent Application Publication 2002/181854 to Steinberg et al. also discloses a fiber holder mounted to a base comprising an optical device mounted thereon, and comprising a plurality of indentations and spacers.

13. Any inquiry concerning the merits of this communication should be directed to Examiner Sarah Song at telephone number 703-306-5799. Any inquiry of a general or clerical nature, or relating to the status of this application or proceeding should be directed to the receptionist at

Application/Control Number: 10/053,225

Page 7

Art Unit: 2874

telephone number 703-308-0956 or to the technical support staff supervisor at telephone number 703-308-3072.

sus

June 4, 2003

John D. Lee
John D. Lee
Primary Examiner